REMARKS

Favorable reconsideration of this application in light of the preceding amendments and the following discussion is respectfully requested.

No claims having been cancelled or added, the Applicants respectfully submit that claims 1-49 remain pending and properly under consideration in this application with claims 1, 11, 16, 17, 19, 20, 28, 33, 34, 36, 37, 41, 43, 44 and 46 being written in independent form.

Rejections under 35 U.S.C. § 103

Claims 1, 3-4, 8-12, 20, 22-23, 27-29, 37, 41-42 and 47-49 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lyer et al.'s U.S. Pat. No. 6,295,450 ("Lyer") in view of Kotzin et al.'s U.S. Pat. No. 5,796,722 ("Kotzin"). The Applicants traverse this rejection for the reasons detailed below.

The Applicants have repeatedly addressed the deficiencies of Lyer in their previous filings, the contents of which are incorporated herein by reference, particularly with respect to Lyer's failure to teach measuring real time traffic flow criteria and utilizing the measured real time flow criteria for setting a number of base stations.

The Applicants submit that the addition of Kotzin does not address the noted deficiencies of Lyer. In particular, the Applicants submit that, as made clear in the disclosure, Kotzin addresses the apportionment of the communications load among a number of carriers available on at single base station. For example, Kotzin provides:

> In spread spectrum systems, such as code division, multiple access (CDMA) wireless communication systems, the carriers occupy a broad band frequency of several megahertz, wherein a number of subscribers are resident on a single carrier occupying a corresponding number of channels (communication resources) which are separated by a unique, quasi-orthogonal code sequence. In this system, the number of channels available on each carrier is not static, but is variable dependent on the amount of resource used by each of the subscribers. ***The reason for such variability is that in a system where a number of carriers are occupying the same frequency simultaneously, the transmit power associated with each subscriber is "noise" for the other subscribers on the same carrier.*** The phenomenon wherein the transmit power associated with each subscriber is effectively additional noise for the other subscribers on the same carrier within a CDMA system is often referred to as system "rise". Therefore, the capacity of such a carrier is typically related to the energy per bit (Eb) required to overcome the system rise (No) to provide a suitable quality level (e.g. a particular frame erasure rate).
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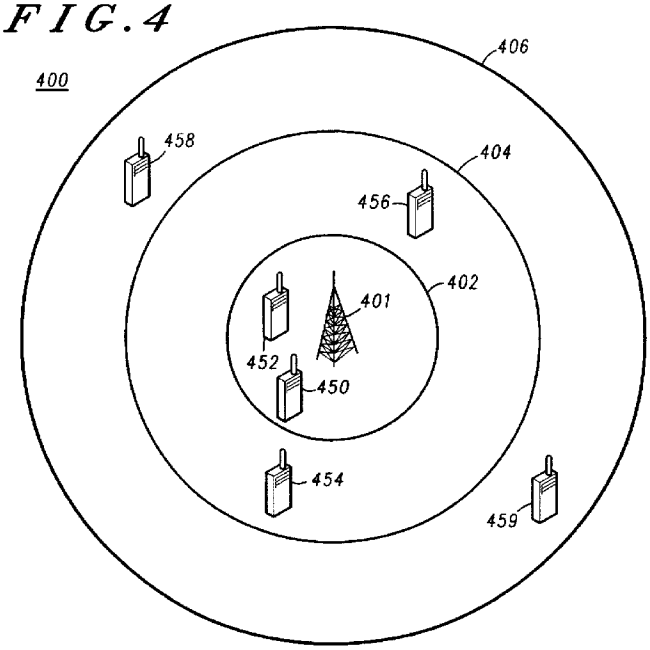
> Load imbalance is defined as a situation where, after assignment of subscribers to carriers, a first carrier in a system is supporting a significantly larger subscriber population than other carriers within the system. Under such conditions, the carrier supporting a large number of subscribers must do so at a power premium, the result of which is heightened system rise. Whereas the capacity of these systems is defined as the number of subscribers the system may support (Eb/No) to provide a predetermined quality level, it becomes clear that any situation which unduly increases the system rise (No) has a corresponding negative effect on system capacity. Field experience has shown that this load imbalance causes some carriers to be so overloaded that they deliver poor voice quality to subscribers, while other carriers within the same network have excess capacity available. During peak usage periods, this problem may be so pronounced that calls may be dropped from one carrier, while other available carriers within the system are not even used.

Kotzin, col. 1, line 50 to col. 2, line 31 (emphasis added). Accordingly, Kotzin provides a method for improving the load balance for the communications being handled by a given base station in which "normal" handoff mechanisms are rejected in favor of Kotzin's apparently "abnormal" handoff between available (and, typically, competing carriers) to reduce the level of noise or "rise" experienced by all the carriers resident on that base station. The operation of one such embodiment is described by Kotzin as:

> ... comprising a monitor which tracks one or a plurality of metrics corresponding to the quantity and/or quality of the load for each of the plurality of carriers. Operatively coupled to the monitor is a means for determining whether any of the metrics monitored has dropped below an acceptable threshold. Operatively coupled to the determining means is a handoff override device which, based upon the determining means, will identify a second carrier with available capacity and, ***overriding normal handoff mechanisms***, will execute an ***immediate handoff of an preferential subscriber*** from the first carrier to the second carrier. In this manner, both the system capacity and the call quality are improved in accordance with the invention.

Kotzin, col. 3, lines 20-32 (emphasis added). This understanding of Kotzin as directed toward balancing the load among a plurality of carriers on a base station basis is further reinforced by Kotzin's FIG. 4 (reproduced below) and the associated portions of the detailed description in which the base station specific nature of the operation is addressed.

FIG. 4



As explained by Kotzin with reference to FIG. 4:

> . . . class category A contains subscribers 450 and 452, class category B contains subscribers 454 and 456, while class category C contains subscribers 458 and 459. In a CDMA wireless communication system, where there is but one channel within that portion of the system of interest, it is advantageous to keep the system rise at a minimum. ***In such a system, the dynamic load balancing system would work to balance the subscribers of the plurality of class categories evenly among the plurality of carriers within that portion of the system.*** For example, if there are two carriers in the portion of the wireless communication system depicted by 400, the dynamic load balancing system would work evenly distribute subscribers from each of the three class categories on each carrier. Therefore, the first carrier may contain subscribers 450, 454 and 459, while the second carrier would service subscribers 452, 456 and 458. As a result, the total system rise is lowered and the negative effects of a load imbalance within the communication system are mitigated.

Kotzin, col. 6, lines 12-29 (emphasis added).

The Applicants maintain, therefore, that while Kotzin may arguably provide for load balancing ***among carriers*** in a multi-carrier wireless communication system, Kotzin simply does not teach or suggest "that measuring real time traffic flow criteria for setting a number of base station [sic] and utilizing the real time traffic flow criteria ***for setting number of base stations***" as suggested by the Examiner. Action at 3 (emphasis added and subsequent citations omitted). The Applicants further contend that the particular portion of Kotzin cited in support of this assertion, specifically col. 6, lines 30-51, and quoted below, again is simply addressing the apportionment of subscribers within the carriers resident on a particular base station in the event of the introduction of a new subscriber to the load currently being handled by the receiving base station.

> In yet another embodiment, FIG. 5 depicts an apparatus 500 operative within a wireless communication system wherein call traffic is dynamically redistributed among a plurality of carriers based on a load metric in combination with a location anticipation metric. In particular, FIG. 5 shows an apparatus 500 for balancing the load among a plurality of carriers within a wireless communication system, the apparatus comprising a load monitoring device 506, a location anticipation device 508 and a system controller 510, whereby the output of the load monitoring device 506 and the location anticipation device 508 are supplied to the system controller 510. ***The system controller 510 analyzes the load metric and the location anticipation metric and instructs the wireless communication system on the current loading and location of each of the plurality of carriers, including recommendations on which carriers need to shed subscribers and which carriers have excess capacity.*** Based on the output of the system controller 510, the wireless communication system selects a suitable candidate subscriber to handoff from a first carrier to a second carrier, thereby mitigating the negative effects of a load imbalance and improving system performance and capacity.

Kotzin, col. 6, lines 30-51 (emphasis added). Accordingly, the Applicants maintain that the cited portion of Kotzin addresses the manner in which an anticipated influx of Cingular

subscribers (for example) would be handled on a base station that already had a high Cingular load but did have additional capacity on other carriers such as Verizon and Nextel. The Applicants contend that this carrier-based balancing within a multi-carrier wireless communication system is distinct from the apportionment of subscribers among various neighboring base stations and, indeed, addresses a fundamentally different issue relating to the performance of a wireless communication system.

The Applicants maintain, therefore, that the proposed modification of Lyer by Kotzin would not have been obvious to one of ordinary skill in the art at the time of the invention and, even if the proposed combination had been made, would not have produced the claimed methods and systems.

The Applicants, therefore, request that these rejections be reconsidered and withdrawn accordingly.

Claims 2, 5-7, 13-15, 21, 24-26, 30-32 and 38-40 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lyer and Kotzin and further in view of Celedon et al.'s U.S. Pub. Pat. Appl. No. 2003/0190916 ("Celedon"). The Applicants traverse this rejection for the reasons detailed below.

The Applicants have addressed the deficiencies of Lyer and Celedon in their previous filings, the contents of which are incorporated herein by reference, particularly with respect to Lyer's failure to teach measuring real time traffic flow criteria and utilizing the measured real

time flow criteria for setting a number of base stations and Celedon's failure to disclose or suggest the measurement of real-time traffic flow criteria associated with base stations but instead promotes the use of non-real time information, *e.g.*, "measurements are stored and available in an MSC to use in determining the necessity for removing or adding a particular cell in a neighbor list." Celedon, para. [0022]. Further, as detailed above and incorporated herein by reference, the Applicants maintain that Kotzin, like the previously applied Tran reference, fails to remedy the deficiencies of the proposed combination of references.

The Applicants maintain, therefore, that the proposed modification of the combination of Lyer and Kotzin by the teachings of Celedon would not have been obvious to one of ordinary skill in the art at the time of the invention and, even if the proposed combination had been made, would not have produced the claimed methods and systems.

The Applicants, therefore, request that these rejections be reconsidered and withdrawn accordingly.

Claims 16-19, 33-36 and 43-46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lyer and Celedon and further in view of Kotzin. The Applicants traverse this rejection for the reasons detailed below.

The Applicants incorporate the discussions provided above regarding the deficiencies in the Lyer, Celedon and Kotzin references with respect to the claimed methods and systems. The Applicants maintain that reshuffling the order in which the references are combined does not

address the fundamental failure of the references to teach or suggest each of the limitations recited in claimed methods and systems.

The Applicants maintain, therefore, that the proposed modification of the combination of Lyer and Celedon by the teachings of Kotzin would not have been obvious to one of ordinary skill in the art at the time of the invention and, even if the proposed combination had been made, would not have produced the claimed methods and systems.

The Applicants, therefore, request that these rejections be reconsidered and withdrawn accordingly.

Further, the Applicants maintain that the proffered interpretation of Kotzin's teachings at col. 6, lines 30-51, is inconsistent with the manner in which this disclosure would be understood by one of ordinary skill in the art, particularly when considered in the context of the problem Kotzin was addressing, specifically, handoffs of subscribers between a variety of carriers to reduce the "noise" or "rise" seen across a multi-carrier system when the individual carrier loading becomes unbalanced.

To the extent that the Examiner wishes to maintain this rejection, the Applicants request that the next communication provide "a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references," *Ex parte Clapp*, 227 USPQ 972, 973 (B.P.A.I. 1985), so that the Applicants are provided a full and fair opportunity to understand and respond to the Examiner's reasoning.

The Applicants submit that repeating a single conclusory statement and alluding to the "analogous" art of the Kotzin reference are not, by themselves, sufficient to meet the obligations imposed by MPEP § 706.02(j), particularly the obligation to properly communicate the basis for a rejection and the rationale underlying the interpretation of the claims and/or references as applied.

CONCLUSION

In view of the above remarks and amendments, the Applicants respectfully submit that each of the pending objections and rejections have been addressed and overcome, leaving the present application in condition for allowance. A notice to that effect is respectfully requested.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to contact the undersigned.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge any underpayment or non-payment of any fees required under 37 C.F.R. §§ 1.16 or 1.17, or credit any overpayment of such fees, to Deposit Account No. 50-3777, including, in particular, extension of time fees.

Respectfully submitted,

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